



## News from Countries, Sites and Platforms: July 2022



*"News from countries, sites and platforms" highlights the efforts of a great many eLTER colleagues in various roles - scientists, site and platform coordinators, national coordinators and so on - who are engaged in a wide variety of fascinating eLTER activities across Europe and beyond. So enjoy!*



**SITES Water - a unique multi-disciplinary program within eLTER Sweden**

SITES (Swedish Infrastructure for Ecosystem Science) is a national infrastructure for terrestrial and limnological field research that partners with eLTER.

SITES aims to promote **high-quality research through long-term field measurements and field experiments**, and by making data and station access available to researchers, regardless of institution. The core of SITES is [nine field research stations](#) that represent a variety of Swedish climate zones and ecosystems, including agricultural land, forests, wetlands, lakes and streams.

SITES also runs [several long-term data collection programs](#) that provide researchers with contextual data. One of these programs is SITES Water. SITES Water builds a unique long-term measurement program where hydrological, physical, chemical, and biological parameters within lakes and streams at seven of the contributing research stations are monitored.

Leif Klemetsson, professor emeritus at the Department of Earth Sciences at the University of Gothenburg, is the coordinator of SITES Water; [in this video](#), he explains how WATER is a key player in landscape and ecosystem connectivity and he highlights what the SITES infrastructure and his program have to offer to the wider research community.



## **SOILSERV ANR project: The three main outcomes**

The [SOILSERV ANR project](#) conducted from 2017-2021 combined **biophysical and socio-economic approaches to assess at different spatial scales ecosystem services of agricultural soils within mixed agroecosystems** involving crops, livestock and uncultivated areas and to analyse their economic valuation in farmers' choices or their consideration in

territory planning. To address the various scales, the project relied on three main study sites selected as they offer sound existing preliminary information, in particular the [Kervidy-Naizin site](#) (a AgrHyS observatory).

### **Carbon sequestration in cultivated soils**

The dynamics of carbon stocks in the ploughed soils of the Kervidy-Naizin catchment were analyzed based on two sampling campaigns carried out in 2013 and in 2018. Carbon stocks were assessed and associated uncertainties were estimated from three different methods: deterministic, stochastic and experimental approaches.

### **Services and Disservices related to soil biodiversity**

Biological, environmental and agronomical data were collected in 92 points over the Kervidy-Naizin catchment and combined with agronomical past history since 2012 (crop rotation, ploughing actions, number of years of meadows) from previous programs and long-term observatory records.

### **Modelling soil ecosystem services**

The **STICS model** (Simulateur multIdisciplinaire pour les Cultures Standards, v8.4) was used to simulate soil-atmosphere-crop interactions and **quantify ecosystem service provision**. Simulations were carried out on 83 points combining the 2018 campaign with existing data and experts. We considered six ecosystem services benefiting two types of stakeholders at the local scale and each service was quantified according to a specific indicator and a specific temporal resolution.

[Read more](#)



## AUV under ice navigation in lake Torneträsk

**Is there life on Jupiter's moon Europa?** An ocean suspected to be under miles of ice gives science hope. But how might it be reached and explored?

In March, a six-person research group from the Robotics Innovation Center of the German Research Center of Artificial Intelligence (DFKI) spent **two weeks at Abisko Scientific Research Station.**

Their goal was to test an autonomous underwater vehicle (AUV) beneath the ice of lake Torneträsk. The researchers are working on developing a **robot that can independently explore the water and stay below the surface for an extended period of time.** The technology will be used to explore the subsurface ocean on Jupiter's moon, Europa.

A primary objective of the field trials was to test the AUV's docking behaviour with different levels of autonomy, and the AUV spent about **50 hours actively in the water.** The docking station will serve as a "home base" for the AUV during long-term missions, and this is where it can recharge and transmit data. The team looks forward to returning to Abisko in a few years to expand their tests on autonomous under-ice navigation.

You can read more about the project and find cool underwater photos and videos from the AUV on the [German Research Center for Artificial Intelligence website.](#)



### LTER-Eastern Ligurian Sea Site (Italy): Monitoring coralline alga *Ellisolandia elongata* and sustainable tourism

From 30 May to 1 June, the Biological and Environmental Sciences students of

the University of Pavia contributed to the **data collection on coralline alga *Ellisolandia elongata* in Palmaria Island** (Regional Park of Porto Venere, LTER Eastern Ligurian Sea Site).

After a two years pandemic pause, the students had the opportunity to discover Palmaria Island, its **marine and terrestrial ecosystems and the geology**, under the guidance of ENEA researchers. In particular, the students contributed to the annual monitoring (i.e. distribution and abundance) of the **bioconstructional intertidal species** of coralline algae *Ellisolandia elongata*, in two sites of Palmaria island, one of the marine species of LTER program since 2013.

Other than studying marine ecosystems, ENEA has **permanent underwater observatories in the Gulf for physico-chemical parameters monitoring**. The shallow stations (1 m of depth) revealed, at species distributional range (0-1 m), an **exceptional increase of 8°C** recorded during the last two weeks of May.

During the trekking on the island for reaching the monitoring sites, the blogger Davide Fiz joined the students. He is the creator of [“Smart Walking” project](#), aiming to discover and valorize the natural and historical beauties of Italy through slow walking.

Davide described the experience as an example of sustainable tourism and **citizen science** aiming to valorize and protect a poorly known Island (**UNESCO heritage**) and to promote it among slow and sustainable destinations.



## Listening out for nature: UK ECN acoustic monitoring presented at symposium

Dr Jan Dick is a social ecologist at the UK Centre for Ecology & Hydrology (UKCEH), a member of the LTER-UK's Environmental Change Network (ECN) team and an active contributor to eLTER. Jan gave a talk recently, during which she described UKCEH's **interest in using passive acoustic monitoring techniques**. She was speaking at the [UK Acoustic Network's](#) symposium in Manchester (15-16 June 2022).

Jan presented work by eLTER that aims to define a set of standard observations and associated methods, to be applied at participating European LTER sites. Some of these standard observations will use acoustic monitoring approaches, for example, to **monitor birds, bats, frogs, and certain insects, such as grasshoppers**. She then presented some on-going research at the ECN's [Cairngorms site](#), funded by the [UK-SCAPE programme](#), that is making use of ultrasonic microphones positioned at three carefully selected locations in a stream catchment to study the resident bat population.

Additional research by Jan and colleagues in the Cairngorms region invited people to explain their relationship to nature. The soundscape featured prominently in peoples' responses, including the sounds of the wind, birds and the river. Her presentation highlighted the potential role of acoustic monitoring in socio-ecological studies to help better understand peoples' appreciation of landscapes.

As well as presenting her work, Dr Dick was an invited member of the symposium's panel responding to audience questions related to soundscapes.

**Around 130 people from a range of sectors** - including academia and

environmental consultancy - attended the symposium, which included speakers from a wide range of countries.



## Shita Wadi - a public seminar and field trip to the LTER station

A seminar on **acacia trees and water** in the southern Arava was held on 31.3.2022, at the Eilat Branch of the Dead Sea and Arava Science Center (DSASC). The seminar was part of an environmental educational project "Water in the Desert", with the support of KKL, Eilat Regional Council and the DSASC.

The seminar was attended by about **50 participants**, including KKL representatives, scientists, various stakeholders and local audience.

During the seminar, we enjoyed fascinating lectures about acacias given by young researchers conducting research in institutions of higher education in Israel, lectures by DSASC researchers monitoring and researching at Shita Wadi LTER site, and KKL personnel.

After the sessions, we went on a tour to the KKL LTER site Shita Wadi. The **field trip demonstrated research methods and hydrological and ecological aspects** of the habitats and ecosystem of the hyper-arid zone.

The future of acacias is uncertain, as it is impacted by the continuous **diminution of open spaces, climate changes including extreme events**, and desertification. We strongly believe in the power of dialogue between stakeholders, sharing information and working together to protect nature and open spaces.



## ECN work in the Cairngorms showcased at Big Nature Weekend

On 15 May, a team from the UK Centre for Ecology & Hydrology jointly hosted an event (with Dundee University) in Kincaig as part of the Cairngorms Nature Big Weekend. The event aimed to show people some of the scientific research that takes place in the Cairngorms National Park. Aimed at all age groups, it was an opportunity for people to contribute their own ideas about the research needed in the park.

Environmental Change Network monitoring at the [Cairngorms ECN site](#) was among the activities showcased. Much of our monitoring, which has been ongoing since 1999, takes place in the Allt a'Mharcaidh valley close to Kincaig.

The team also described their international collaborative work, demonstrating how data collected in the Cairngorms contributes to a range of wider studies through projects such as [INTERACT](#) (Arctic and alpine region), [eLTER](#) (pan-European) and [GLORIA](#) (mountain top vegetation).

As well as videos and posters explaining relevant science, the team took a long a working trail camera of the type used to gather information on wildlife in the Allt a'Mharcaidh. Visitors were able to chat to the team and share their own ideas on local research needs.

If you are interested in collaborating with the UKCEH ECN team at the Cairngorms or other ECN sites, [please contact them](#).

ECN's monitoring at the Cairngorms site is carried out by staff from the UK Centre for Ecology & Hydrology and is funded by UKCEH's [UK-SCAPE](#)





## Modelling policy impacts on ecosystem services and biodiversity: The BESTMAP Summer School

**Understanding the environmental impacts of agricultural policies,** including measures such as agri-environmental schemes (AES) or organic farming, is a crucial step in assessing their effectiveness in European farmlands. Scientific models play an important role in quantifying such impacts, especially on biodiversity and ecosystem services provided by the agricultural landscapes.

In that context, BESTMAP organises the project's first Summer School on modelling policy impacts on **ecosystem services and biodiversity**, which will take place in Olomouc, Czech Republic on September 12–16, 2022. Representatives of eLTER will also be present.

### **The three main objectives of BESTMAP's summer school are:**

1. Obtain an introduction to different modelling approaches, including
  - agent-based modelling,
  - biodiversity/species distribution modelling, and
  - ecosystem services modelling (both provisioning and regulating ecosystem services)
2. **Learn through practical**, interactive exercises about the potentials and limitations of the different modelling approaches;
3. Get **hands-on experience** with specific models by applying them to real-world data from BESTMAP case studies;

PhD students, early-career researchers, as well as Master's students with relevant backgrounds in the field of agriculture-environment interactions are all welcome at the event. [You can download the full agenda here.](#)

**Registration and attendance are free of charge.** Participants are required to cover their travel and accommodation expenses. However,

BESTMAP's team is able to support three participants with a travel award of 300 EUR.

The Summer School coincides with BESTMAP's third [General Assembly](#) (13 and 14 September 2022).

[Read more](#)



**This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871126 (eLTER PPP) and No 871128 (eLTER PLUS)**

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